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The Role of Information Technology in Visual Communication: Analysis of Graphic Displays in Live Football Matches on Television

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ABSTRACT

This study examines how information technology shapes visual communication through broadcast graphics in live football television. It compares selected graphic displays from the 2026 FIFA World Cup Asian Qualifiers and the UEFA Champions League, including line-up boards, score graphics, small scoreboards, and offside/VAR displays. Using qualitative visual communication analysis, the study applies Gillian Rose's framework by examining the sites of production, image, and audiencing through technological, compositional, and social modalities. The findings show that broadcast graphics function not only as decorative overlays but also as production infrastructure, data visualization tools, and interpretive interfaces for audiences. UEFA Champions League graphics emphasize premium branding, dynamic composition, and integrated data presentation, whereas Asian Qualifiers graphics prioritize clarity, authority, and functional information delivery. The study contributes to media and communication scholarship by positioning football broadcast graphics as communicative artifacts shaped by technology, institutional branding, and popular-cultural value. Practically, it offers insights for Indonesian broadcasters seeking to improve international-standard sports production.

INTRODUCTION

Football has become one of the most attractive television products because it combines live competition, emotional attachment, national or club identity, and a strong commercial ecosystem. In Indonesia, football broadcasts consistently attract public attention, particularly when national teams, Asian competitions, or major European tournaments are aired. Audience interest in football is reflected in the ratings and audience share of several sports programs on Indonesian television in 2024, as shown in Table 1. Although audience measurement for live sports must be interpreted carefully because reported figures may involve different methodological assumptions (Van Reeth, 2023), the available data still indicate that football remains a strategic content category for broadcasters.

Table 1. Ratings and Share of Sports Programs on Indonesian Television in 2024

Rank	Description (grouped)	Level 2	Date	Start time	End time	Channel/Target	TVR (+) UPMID 1	TVR MALE UPMID 1	TVR FEMALE UPMID 1	TVR KIDS MALE UPMID 1	TVR PRE TEEN MALE UPMID	TVR TEEN MALE UPMID 1	TVR YOUTH MALE UPMID 1	TVR ADULT MALE 1	TVR MATURE MALE UPMID	TVR OLDIES MALE UPMID	TVR GRAND MALE UPMID 1	TVR KIDS FEMALE UPMID	TVR PRE TEEN FEMALE	TVR TEEN FEMALE UPMID	TVR YOUTH FEMALE UPMID	TVR ADULT FEMALE UPMID	TVR MATURE FEMALE	TVR OLDIES FEMALE	TVR GRAND FEMALE UPMID	UPPER	MIDDLE1
1	C U23 AC:INDONESIA VS U2	Sport:Mate	29/04/2024	19:35	24:05	RCTI	14,0	14,5	13,6	10,8	9,3	13,3	10,9	13,9	14,8	19,3	17,5	7,1	10,2	13,9	11,1	15,1	14,8	16,4	14,1	14,1	14,0
2	C U23 AC:IRAQ VS INDONESI	Sport:Mate	02/05/2024	20:35	25:44	RCTI	11,5	12,8	10,3	8,1	7,5	9,9	10,9	11,6	13,0	17,9	17,1	3,3	8,9	9,0	7,6	11,0	11,6	13,1	12,2	10,9	12,3
3	C AQRT26:CHINA PR VS INDO	Sport:Mate	15/10/2024	17:00	21:05	RCTI	10,1	10,6	9,6	7,5	9,5	10,0	8,3	9,1	10,2	13,6	13,6	4,9	6,5	6,6	8,4	8,9	11,7	12,5	11,3	8,9	11,4
4	C AQRT26:INDONESIA VS AUS	Sport:Mate	10/09/2024	16:00	21:46	RCTI	9,5	10,2	8,7	6,5	8,2	10,1	8,1	9,5	10,7	13,2	12,1	5,7	6,4	6,1	7,5	7,8	9,1	12,1	10,4	8,5	10,5
5	C U23 AC:KOREA R VS INDON	Sport:Mate	26/04/2024	02:00	04:05	RCTI	9,4	11,8	6,9	2,9	4,1	10,8	11,2	12,8	12,6	16,7	15,1	1,6	4,1	5,7	7,1	8,3	5,5	9,2	9,6	9,4	9,3
6	C AQRT26:INDONESIA VS SAI	Sport:Mate	19/11/2024	15:59	21:46	RCTI	9,3	9,8	8,9	6,8	8,6	10,8	5,7	8,7	8,8	12,7	13,5	5,2	8,1	5,0	7,0	9,5	10,8	10,3	10,3	8,4	10,3
7	TO 2024:INDONESIA VS GUIN	Sport:Mate	09/05/2024	18:00	22:35	RCTI	8,9	9,6	8,3	5,8	6,2	10,1	4,9	7,7	10,8	14,0	12,4	6,0	7,6	7,3	5,7	8,7	8,0	9,1	11,2	8,7	9,2
8	C ASIAN C:AUSTRALIA VS IN	Sport:Mate	23/01/2024	17:30	20:28	RCTI	8,6	10,0	7,2	7,4	5,4	10,7	10,0	10,9	10,8	11,5	11,1	4,3	4,7	7,7	6,3	7,4	6,2	9,2	8,8	9,2	7,9
9	C U23 AC:INDONESIA VS AUS	Sport:Mate	19/04/2024	19:33	22:39	RCTI	8,3	9,1	7,4	4,5	7,3	7,7	6,5	10,5	10,5	10,9	10,7	2,8	4,2	6,8	4,7	8,6	7,9	9,3	10,0	9,5	8,0
10	IFA WCQ:INDONESIA VS VIE	Sport:Mate	21/03/2024	19:55	22:52	RCTI	8,2	9,1	7,4	3,8	7,3	9,8	9,7	9,0	8,2	11,0	11,5	3,6	5,6	2,9	5,9	6,0	9,2	10,1	10,1	8,1	8,4

Source: Research documentation, 2024.

Table 1 demonstrates that football-related programs can obtain substantial audience ratings and shares on Indonesian television. This evidence is important because it situates broadcast graphics within a competitive media market. When a program reaches a large audience, visual information displayed on screen is no longer a minor production detail; it becomes part of the communicative quality, brand identity, and commercial value of the broadcast. Therefore, the popularity of football broadcasts requires television producers to maintain a high level of production quality.

Broadcast quality is not determined only by camera placement, commentary, audio quality, or editing rhythm, but also by graphic displays that provide match information to viewers. Graphics present essential information such as team line-ups, player names, substitutions, match time, score, statistics, and video assistant referee (VAR) decisions. Although these elements often occupy only a small portion of the screen, they strongly influence how viewers read and interpret the match (Cummins et al., 2016; Irawan, 2012; Irawan, 2018).

The development of information technology has transformed the position of graphics in football broadcasts. Graphics are no longer limited to static text or simple scoreboards. They now involve real-time data feeds, motion graphic templates, automated score systems, player-tracking data, augmented reality elements, and data visualization. Studies in sports analytics and computer vision show that digital technologies can process football events and broadcast images into meaningful tactical and statistical information (Chen et al., 2022, 2023; Morra et al., 2020; Paneru et al., 2024). This technological development enables broadcasters to transform complex match data into concise visual information for mass audiences.

However, the quality of broadcast graphics is not always equal across competitions, broadcasters, and production markets. In the Indonesian context, international matches are often supported by foreign or rights-holder production teams because the visual standards of global football broadcasting require advanced technical infrastructure, strict brand guidelines, and experienced graphic operators. Prianto (2023) also shows that audience perception of Indonesian football broadcasts differs from perceptions of English Premier League broadcasts, including in visual-graphic quality. This situation raises an important issue for communication studies: broadcast graphics should not be understood merely as technical ornaments, but as visual communication systems shaped by technology, design composition, institutional control, and audience expectations.

Previous studies have discussed televised football as a mediated narrative (Barnfield, 2013), the professional work of analysts in sports broadcasts (Fele & Campagnolo, 2021), the political economy of football broadcasting rights (Evens & Lefever, 2011), the changing dynamics of digital sport content (Hutchins & Rowe, 2009), and technological innovations in competition graphics (Torres-Martín et al., 2022). Nevertheless, relatively limited attention has been given to the way live-broadcast graphics communicate

information visually by combining technological systems, compositional choices, and social-commercial meanings. This study addresses that gap by analyzing graphic displays in selected football broadcasts from two different competition contexts: the 2026 FIFA World Cup Asian Qualifiers and the UEFA Champions League.

Based on this background, the study addresses three research questions. First, how are graphic displays produced in live football broadcasts and what role does information technology play in that process? Second, what are the forms, elements, and visual characteristics of the graphics presented during live football broadcasts? Third, how are these graphic displays interpreted by viewers with different levels of football knowledge and media literacy? The study contributes to visual communication scholarship by explaining broadcast graphics as technological, compositional, and cultural products.

LITERATURE REVIEW

Broadcast Graphics as Visual Communication in Football

Live football broadcasting is a complex audio-visual construction. It does not simply transmit a match from the stadium to the living room; rather, it organizes camera angles, cuts, replay sequences, commentary, sound, and graphic overlays into a coherent viewing experience. Barnfield (2013) explains that televised soccer constructs a microgeography of the screen in which viewers understand space and time through a combination of visual and verbal communication. This means that live football broadcasting is a mediated narrative rather than a neutral representation of reality.

Graphic displays are part of this construction. Scoreboards, lower-third captions, line-up boards, substitution graphics, tactical arrows, and VAR animations help viewers identify what is happening, who is involved, and why a particular moment matters. Research on information graphics in televised sports shows that viewers attend to these visual elements and that interest in sport and statistics can influence how strongly viewers process them (Cummins et al., 2016). In this sense, graphics work as informational signs and interpretive cues, condensing large amounts of data into brief visual messages that support live comprehension.

The visual function of graphics is also connected to the grammar of television production. In fast-paced sports, graphic information must be accurate, readable, brief, and visually integrated with moving images. If graphics are too slow, unclear, or excessive, they may distract viewers from the match. If they are well designed, they can improve orientation, strengthen narrative tension, and support interpretation. This makes broadcast graphics a relevant object of visual communication analysis.

Information Technology, Data Visualization, and Sports Broadcasting

Information technology has become central to contemporary sports broadcasting. Digital systems enable data capture, data processing, graphic rendering, and real-time delivery to the television screen. Player-tracking technologies, automated data feeds, replay servers, and computer-generated graphic systems allow broadcasters to present information that was previously unavailable or difficult to visualize. In sports-video research, visualization technologies are increasingly used to communicate insights and explain player strategies through augmented video (Chen et al., 2022, 2023). Automated production systems also show how live sports broadcasting can be supported by event-driven computational processes (Pan et al., 2021).

For live television, these technologies are valuable because football events unfold quickly. Viewers need concise information without losing sight of the match. Data visualization transforms numerical or positional data into visible forms such as score boxes, line-up formations, movement indicators, heat maps, and offside lines. Morra et al. (2020), for example, demonstrate how computer graphics and sports analytics can support soccer event recognition, while Paneru et al. (2024) show how deep-learning techniques can analyze broadcast images for soccer pass receiver prediction.

However, data visualization in sports broadcasting is not purely technical. The graphic system must also follow the visual identity of the competition and the commercial identity of the broadcaster. Torres-Martín et al. (2022) argue that data representation in sports competitions functions not only as information but also as brand construction. This perspective is important because UEFA Champions League graphics and Asian Qualifiers graphics do not merely deliver match data; they also communicate institutional identity, production maturity, and market positioning.

Popular Culture and the Industrial Logic of Football Broadcasting

Football broadcasting is also part of popular culture. It is produced for large audiences, distributed through mass media and digital platforms, and connected to sponsorship, advertising, rights ownership, and fan consumption. From the perspective of popular culture, football television is not only a sport product, but also a cultural commodity shaped by industrial production and audience demand. The commercial significance of football broadcasting is reflected in the competition for media rights and viewers attention (Evens & Lefever, 2011; Hutchins & Rowe, 2009).

In this context, broadcast graphics contribute to the industrial production of football as media entertainment. Graphics strengthen the identity of a competition, create a sense of professionalism, and help audiences experience the match as an organized media event. This is consistent with the broader logic of popular culture, where repeated exposure, attractive visual forms, and mass circulation increase the economic and symbolic value of media content. The connection between audience engagement and value creation is also evident in contemporary sports live-streaming environments (Liu et al., 2024).

This study uses Gillian Rose's visual methodology as the main analytical framework and connects it with the logic of popular culture. Rose's framework enables the study to examine how graphics are produced, how they appear as visual texts, and how they may be interpreted by audiences. Popular culture theory helps explain why such graphics matter commercially: they support audience enjoyment, increase the perceived quality of broadcasts, and contribute to the commodification of football as media entertainment.

METHOD

Research Design

This study uses qualitative visual communication analysis. This approach is appropriate because the research object is not only verbal data, but also visual material displayed on television screens. The analysis focuses on how meaning is constructed through graphic forms, colors, layout, typography, animation, and their relation to broadcast technology.

The analysis follows Gillian Rose's visual methodology, which distinguishes three sites of meaning: the site of production, the site of the image itself, and the site of audiencing (Rose, 2001, 2012). The site of production concerns the processes, institutions, and technologies behind the graphics. The site of the image itself concerns the compositional features of the visual display. The site of audiencing concerns how viewers may interpret and use the graphics while watching the match.

Each site is examined through three modalities: technological, compositional, and social. The technological modality concerns the tools, software, data feeds, and broadcast systems used to create and deliver graphics. The compositional modality concerns visual form, color, layout, typography, animation, and hierarchy of information. The social modality concerns the institutional, commercial, and audience-related contexts that shape graphic presentation.

Data Sources and Sampling

The data consist of selected screenshots from live football broadcasts, particularly the 2026 FIFA World Cup Asian Qualifiers and the UEFA Champions League. The sample was selected purposively because both competitions represent international football broadcasts with different production traditions, institutional identities, and market orientations. The selected units include line-up graphics, large score graphics, small scoreboards, and offside/VAR-related graphics. These visual units were chosen because they represent recurring graphic types that are central to viewers understanding of live match information.

Research Procedures

Data were collected through documentation and visual observation. Documentation was conducted by saving selected screenshots from the broadcasts, while visual observation was carried out by examining when, where, and how each graphic appeared during the match. The analysis proceeded in four stages: identifying graphic types, describing visual elements, interpreting technological and compositional characteristics, and comparing the two competition contexts. Table 2 presents the visual units selected for analysis.

To strengthen analytical credibility, the screenshots were compared across graphic types and competition contexts. The interpretation did not rely on a single image, but on repeated patterns across selected graphics. The analysis also connected visual evidence with relevant literature on televised football, sports broadcasting, data visualization, and popular culture.

Ethical Considerations

This study analyzes publicly broadcast visual materials and does not involve human participants, personal data collection, or intervention with audiences. Therefore, formal human-subject ethical approval was not required. The screenshots are used only for scholarly visual analysis and are acknowledged as research documentation from selected broadcasts. The authors recognize that broadcast images remain subject to the rights of the respective broadcasters and competition organizers.

RESULTS AND DISCUSSION

Results

Research Question 1

The first research question concerns how graphic displays are produced in live football broadcasts and what role information technology plays in that process. The analysis shows that broadcast graphics are not produced spontaneously by a single operator. They are generated through an integrated production workflow involving rights holders, broadcast producers, graphic designers, data providers, software operators, and match-control systems.

Information technology plays a decisive role in this production workflow. Graphic templates are prepared before the match and connected to live data sources. Team line-ups, player names, scores, match times, substitutions, disciplinary cards, and VAR decisions must be updated quickly and accurately. These updates require data input, template automation, rendering systems, and coordination with the director or producer. Without reliable technology, the graphics would be delayed, inaccurate, or visually inconsistent.

The UEFA Champions League graphics demonstrate a mature production system. The visual identity is consistent across different graphic types, and the transitions appear designed to support both information and spectacle. The Asian Qualifiers graphics also show an organized production system, but the visual language tends to emphasize functional information rather than premium visual spectacle. These differences indicate that information technology is embedded not only in technical operation, but also in institutional standards and competition branding.

Research Question 2

The second research question concerns the forms, elements, and visual characteristics of the graphics presented during live football broadcasts. Eight graphic displays were selected as units of analysis. These units represent the main graphic forms that appear in live football broadcasts: line-up graphics, large score graphics, small scoreboards, and offside or VAR-related graphics. The units are shown in Table 2.

Table 2. Units of Graphical Display Analysis in Live Football Broadcasts

No.	Visual Unit	Screenshot
1	UEFA Champions League line-up graphic	
2	Asian Qualifiers line-up graphic	

No.	Visual Unit	Screenshot
3	UEFA Champions League large score graphic	
4	Asian Qualifiers large score graphic	
5	UEFA Champions League small scoreboard	
6	Asian Qualifiers small scoreboard	
7	UEFA Champions League offside/VAR graphic	
8	Asian Qualifiers offside graphic	

Source: Research documentation from selected broadcast screenshots.

At the site of the image itself, the graphics can be read through their formal composition. The line-up graphics display team structure, player identity, and positional arrangement. The score graphics emphasize match result, team names, and competition identity. The small scoreboards provide continuous orientation by showing team abbreviations, match time, and current score. The offside or VAR graphics show how technology enters the visual field directly by providing evidence for referee-related decisions.

The UEFA Champions League graphics are characterized by a dominant blue visual identity, smooth gradients, clear contrast, and a premium aesthetic associated with the competition brand. The layout tends

to be dynamic and polished, with visual hierarchy that guides the eye from competition identity to match information. The typography appears clean and modern, supporting readability while maintaining elegance.
The Asian Qualifiers graphics, by contrast, appear more functional and direct. Red and related warm tones are more visible, and the graphic forms tend to emphasize clarity, competition authority, and essential information. The composition is more rigid, but it still performs the necessary communicative function by identifying teams, scores, and match situations. These differences are summarized in Table 3.

Table 3. Comparative Summary of Broadcast Graphic Characteristics

Aspect	UEFA Champions League	Asian Qualifiers	Interpretive Meaning
Visual identity	Dominant blue palette, premium and dynamic tone	Dominant warm/red palette, official and functional tone	Graphics represent competition branding and institutional identity.
Composition	Layered, fluid, and visually polished	Clear, rigid, and straightforward	Different design strategies reflect different production cultures.
Data presentation	Integrated with real-time event graphics and brand animation	Prioritizes essential match information	Information technology supports both data accuracy and visual hierarchy.
Audience orientation	Designed for global premium sport entertainment	Designed for regional/international qualification context	Audience expectations shape visual complexity and readability.
Popular culture value	Enhances spectacle, prestige, and commercial identity	Strengthens official tournament communication	Graphics help transform football into a branded media product.

Source: Author analysis, 2026.

Research Question 3

The third research question concerns how graphic displays are interpreted by viewers with different levels of football knowledge and media literacy. In live football broadcasts, audiences are diverse. Some viewers are highly knowledgeable fans who understand tactical formations, player roles, and statistical indicators. Others are casual viewers who rely on graphics mainly to identify score, time, teams, and important match events.

For general audiences, the most important function of graphics is readability. Scoreboards and goal graphics help viewers understand the match situation quickly, especially when they join a broadcast after kick-off or are not familiar with the teams. Line-up graphics help viewers identify players and formations before the match begins. VAR and offside graphics help explain why a goal is accepted or disallowed.

Graphics also influence the emotional experience of watching football. A goal animation, a dramatic score update, or a VAR line can intensify suspense and direct viewers' attention. In this sense, graphics do not only provide information; they also shape the rhythm and affective experience of the broadcast. Audience interpretation is also shaped by familiarity with international broadcast standards. Viewers who regularly watch European football may expect fast, elegant, and data-rich graphics, while viewers of regional competitions may place greater emphasis on clarity and accessibility.

Discussion

The comparison between UEFA Champions League and Asian Qualifiers graphics shows that information technology does not produce a single universal style. Technology is translated through institutional identity, production culture, market orientation, and audience expectations. UEFA Champions League graphics use technology to create a premium and spectacular viewing experience, while Asian Qualifiers graphics use technology primarily to ensure clarity, accuracy, and official communication.

This finding supports the idea that live football broadcasts are industrial cultural products. They are produced through standardized systems, circulated to large audiences, and evaluated through audience satisfaction and commercial value. Graphics contribute to this process by making the broadcast more readable, professional, and emotionally engaging. They also reinforce the symbolic identity of the competition. In popular culture terms, graphics help transform a football match into a branded media event.

The findings also extend Rose's visual methodology by showing that the three sites of meaning are closely connected in sports broadcasting. The site of production determines available technology and graphic templates. The site of the image itself reveals how data are organized visually. The site of audiencing explains why readability, familiarity, and emotional effect matter. These three sites cannot be separated because live broadcast graphics are produced, displayed, and interpreted almost simultaneously.

For Indonesian television, the implication is clear. To improve the quality of live football broadcasts, broadcasters need to develop graphic systems that combine reliable real-time data integration, strong visual identity, readable typography, and trained operators. Investment in technology must be accompanied by visual communication strategy. A technically advanced graphic system will not be effective if the design is unclear; conversely, attractive design will not meet international standards if the data system is slow or inaccurate.

CONCLUSION

This study concludes that information technology is integral to the visual communication of live football broadcasts. Graphics function as production infrastructure, visual design elements, and interpretive tools for audiences. They help organize match information, strengthen competition identity, support emotional engagement, and increase the professional quality of sports broadcasting.

The analysis of selected UEFA Champions League and Asian Qualifiers graphics shows that different competitions use different visual strategies. UEFA Champions League graphics tend to be more dynamic, brand-integrated, and technologically mature, while Asian Qualifiers graphics tend to be more functional, official, and standardized. These differences demonstrate that broadcast graphics are shaped by the interaction between technology, institutional identity, and audience expectations.

The scholarly contribution of this study lies in positioning football broadcast graphics as communicative artifacts rather than decorative screen elements. By integrating visual methodology and popular culture theory, the study explains how real-time data, visual composition, and commercial media logic converge in live sports television. Practically, the study recommends that Indonesian broadcasters strengthen real-time data integration, graphic template design, operator training, and audience-oriented visual standards.

This study is limited to selected screenshots from two international competition contexts; therefore, the findings cannot represent all football broadcasts or all audience interpretations. Future research should include larger samples, interviews with broadcast producers and graphic operators, and audience reception studies using surveys, focus groups, or eye-tracking methods. Such studies would provide deeper insight into how broadcast graphics influence comprehension, attention, and enjoyment in live sports media.

DECLARATIONS

Author Contributions

Rahmat Edi Irawan: Conceptualization, Methodology, Investigation, Writing-Original Draft. Merry Fridha Tri Palupi: Formal Analysis, Validation, Writing-Review & Editing. Arleen Ariestyani: Data Curation, Visualization, Writing-Review & Editing. Trisna Prandawa Putra: Investigation, Project Administration, Writing-Review & Editing. Attanan Tachopilsawong: Validation, Supervision, Writing-Review & Editing.

Conflict of Interest

The authors declare no conflict of interest.

Data Availability

The visual materials analyzed in this study consist of selected broadcast screenshots. Due to broadcast copyright constraints, the supporting documentation is not publicly deposited but may be made available from the corresponding author for scholarly verification where legally permissible.

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REFERENCES

Adyatama, L. L. K., Palupi, M. F. T., & Ayodya, B. P. (2023). Analisis visual product placement Kopiko pada kanal YouTube Rans Entertainment edisi Disneyland 2022. In *Prosiding Seminar Komunikasi*. Universitas 17 Agustus 1945 Surabaya.

Bafadal, M. F., Riyanto, F. I., Nanda, A. W. D., Darmo, D., & Febriianti, S. (2024). Review aplikasi teknologi digital dalam olahraga sepakbola. *Jurnal Pendidikan Olahraga, 14*(3), 113–119. https://doi.org/10.37630/jpo.v14i3.1656

Barnfield, A. (2013). Soccer, broadcasting, and narrative: On televising a live soccer match. *Communication & Sport, 1*(4), 326–341. https://doi.org/10.1177/2167479513479107

Chen, Z., Ye, S., Chu, X., Xia, H., Zhang, H., Qu, H., & Wu, Y. (2022). Augmenting sports videos with VisCommentator. *IEEE Transactions on Visualization and Computer Graphics, 28*(1), 824–834. https://doi.org/10.1109/TVCG.2021.3114806

Chen, Z., Yang, Q., Xie, X., Beyer, J., Xia, H., Wu, Y., & Pfister, H. (2023). Sporthesia: Augmenting sports videos using natural language. *IEEE Transactions on Visualization and Computer Graphics, 29*(1), 918–928. https://doi.org/10.1109/TVCG.2022.3209497

Chowdhury, P. (2014). Use of popular culture in enhancing English language teaching. *International Journal of Advanced Research, 2*(9), 805–815.

Cummins, R. G., Gong, Z., & Kim, H.-S. (2016). Individual differences in selective attention to information graphics in televised sports. *Communication & Sport, 4*(1), 102–120. https://doi.org/10.1177/2167479513517491

Dyatmika, T. (2015). Tayangan televisi dan sepak bola di Indonesia: Tinjauan ekonomi politik media pada penyiaran televisi Indonesia. *Konvergensi: Jurnal Ilmiah Ilmu Komunikasi, 1*(1), 53–69.

Evens, T., & Lefever, K. (2011). Watching the football game: Broadcasting rights for the European digital television market. *Journal of Sport & Social Issues, 35*(1), 33–49. https://doi.org/10.1177/0193723510396665

Fele, G., & Campagnolo, G. M. (2021). Expertise and the work of football match analysts in TV sport broadcasts. *Discourse Studies, 23*(5), 616–635. https://doi.org/10.1177/14614456211016799

Hutchins, B., & Rowe, D. (2009). From broadcast scarcity to digital plenitude: The changing dynamics of the media sport content economy. *Television & New Media, 10*(4), 354–370. https://doi.org/10.1177/1527476409334016

Irawan, R. E. (2012). Sisi positif dan negatif persaingan antarstasiun televisi di Indonesia di mata penonton televisi. *Humaniora, 3*(1), 173–180. https://doi.org/10.21512/humaniora.v3i1.3247

Irawan, R. E., Aras, M., & Palupi, M. F. T. (2018). Strategi NET TV memproduksi konten untuk televisi multiplatform. *Prosiding Konferensi Nasional Komunikasi, 2*(1), 373–382. https://doi.org/10.25008/pknk.v2i01.175

Liu, H., Chung, L., Tan, K. H., & Peng, B. (2024). I want to view it my way! How viewer engagement shapes the value co-creation on sports live streaming platform. *Journal of Business Research, 170*, 114331. https://doi.org/10.1016/j.jbusres.2023.114331

Malla, A. (2017). Significance of popular culture in perspective of literature. *Galaxy: International Multidisciplinary Research Journal, 6*(1), 1–6.

Morra, L., Manigrasso, F., & Lamberti, F. (2020). SoccER: Computer graphics meets sports analytics for soccer event recognition. *SoftwareX, 12*, 100612. https://doi.org/10.1016/j.softx.2020.100612

Pan, Y., Chen, Y., Bao, Q., Zhang, N., Yao, T., Liu, J., & Mei, T. (2021). Smart Director: An event-driven directing system for live broadcasting. *ACM Transactions on Multimedia Computing, Communications, and Applications, 17*(4), Article 119. https://doi.org/10.1145/3448981

Paneru, B., Paneru, B., Poudyal, R., & Poudyal, K. (2024). Enhancing soccer pass receiver prediction in broadcast images through advanced deep learning techniques: A comprehensive study on model optimization and performance evaluation. *Journal of Soft Computing Exploration, 5*(2), 115–121. https://doi.org/10.52465/joscex.v5i2.301

Pravitasari, I. S., Pandanwangi, B., & Laksani, H. (2023). Komodifikasi perempuan pada desain kemasan: Studi kasus teh tubruk. *Citrawira: Journal of Advertising and Visual Communication, 4*(2), 187–201. https://doi.org/10.33153/citrawira.v4i2.5663

Prianto, B. A. (2023). Karakteristik persepsi penonton terhadap siaran sepakbola Liga 1 Indonesia dengan Liga Premier Inggris musim 2021/2022. *Jurnal Sains Keolahragaan dan Kesehatan, 7*(2), 72–81. https://doi.org/10.5614/jskk.2022.7.2.2

Rose, G. (2001). *Visual methodologies: An introduction to the interpretation of visual materials*. SAGE Publications.

Rose, G. (2012). *Visual methodologies: An introduction to researching with visual materials* (3rd ed.). SAGE Publications.

Torres-Martín, J. L., Castro-Martínez, A., & Díaz-Morilla, P. (2022). La representación de datos como elemento informativo y de construcción de marca en las competiciones deportivas: Las innovaciones

tecnológicas en los grafismos de LaLiga Santander. *Fonseca, Journal of Communication, 25*, 95–113. https://doi.org/10.14201/fjc.29755

Van Reeth, D. (2023). The complexities of understanding reported TV audiences for live sports broadcasts. *International Journal of Sport Finance, 18*(1), 19–34. https://doi.org/10.32731/IJSF.181.022023.020